OHIT
Arkansas Office of Health Information Technology

Statewide Health Information Exchange (HIE) Financial Sustainability Study

HIE Council Briefing
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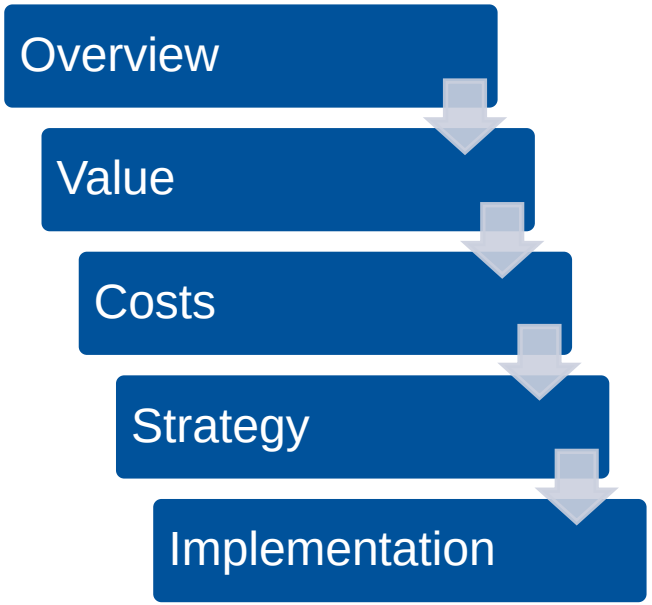
Gartner Contact
Frank Petrus
Public Sector - Human Health and Services
Gartner Consulting
Frank.Petrus@gartner.com

Gartner

Arkansas HIE Council Meeting Financial Feasibility Study Agenda

- Project Context and Approach
  - Project Overview, Principles and Assumptions of the Funding Model
- Summary of Gartner Analysis and Direction
  - HIE Value Definition, Quantified Financial Benefits and Additional Benefits
  - Costs and Funding Needs, and Time-Based and “per Metric” Cost & Value Comparison
  - Funding Strategies and Mechanisms
- Implementation Recommendations
  - Funding Strategy
  - Revision of the Funding Model Over Time



Introductions

- Gartner Project Team
  - Frank Petrus
  - Jeff Perkins
  - Erika Chahil
  - Kevin Chartrand

- HIE Council Members

Objectives for this Meeting

The primary objectives of today's session are to:

- Discuss key principles that will govern the Financial Sustainability Model for SHARE
- Discuss the benefits and value that can be achieved through the establishment and use of SHARE
- Review the expected costs and the funding already in place for SHARE
- Identify and discuss the constituent groups that should contribute to SHARE to meet the funding gap
- Introduce a straw man Financial Sustainability Model for SHARE
- Discuss next steps and future needs for the Sustainability Model

Financial Feasibility Project Context

Project Background

- The Arkansas SP/OP was approved by the Office of the National Coordinator for Health Information Technology on February 25, 2011
- The Arkansas legislature approved Acts 694 and 891 (house bills 542 and 1905) in March, 2011 to establish OHIT, and to enable OHIT to establish SHARE

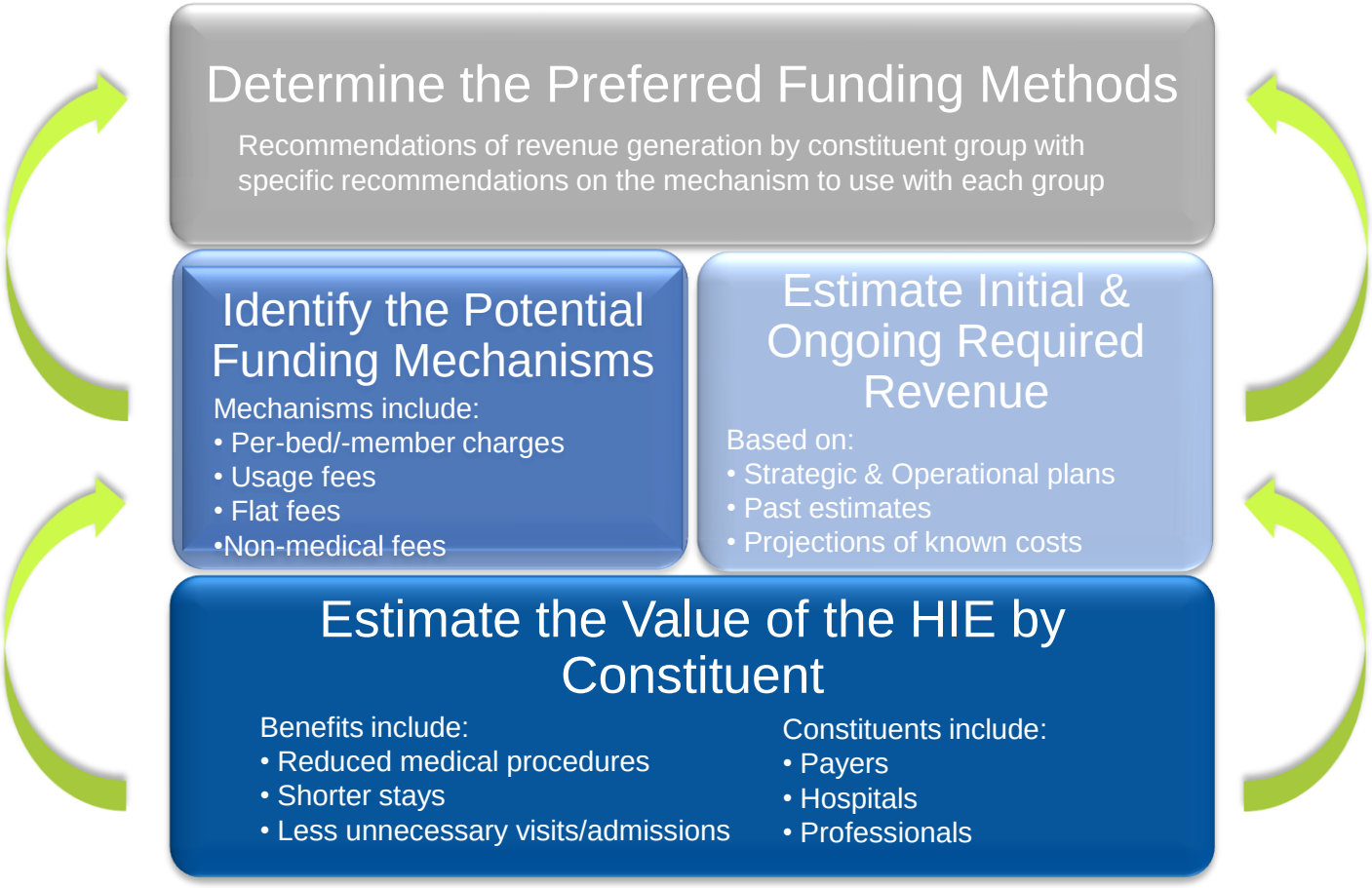
OHIT's Key Priorities for Financial Model

- Identify quantifiable value of the HIE to various constituents
- Ensuring the accuracy of the HIE revenue estimates for the design /development / implementation and for its on-going sustainability
- Identify potential funding mechanisms for the financial sustainability for the State's HIE
- Develop detailed funding scenarios and assessment formulas for the most viable alternatives for initial development and implementation and on-going financial sustainability
- Conduct an analysis of viable funding alternatives
- Finalize the recommendations with OHIT for the finance model of choice for funding the initial HIE development and deployment and for its on-going financial sustainability

Project Objectives

- Consideration of the OHIT enabling legislation's framework for developing fee structures
- Consideration of State Medicaid Director (SMD) letter regarding federal matching and cost allocation for HIE related costs
- Analysis of ADH and CDC funding currently spent on Registry and public health reporting requirements
- Analysis of High Cost Fund at PSC and/or feasibility of a "universal service fee" or other telecommunications-based model for HIT fund

The Model was developed based on an established framework



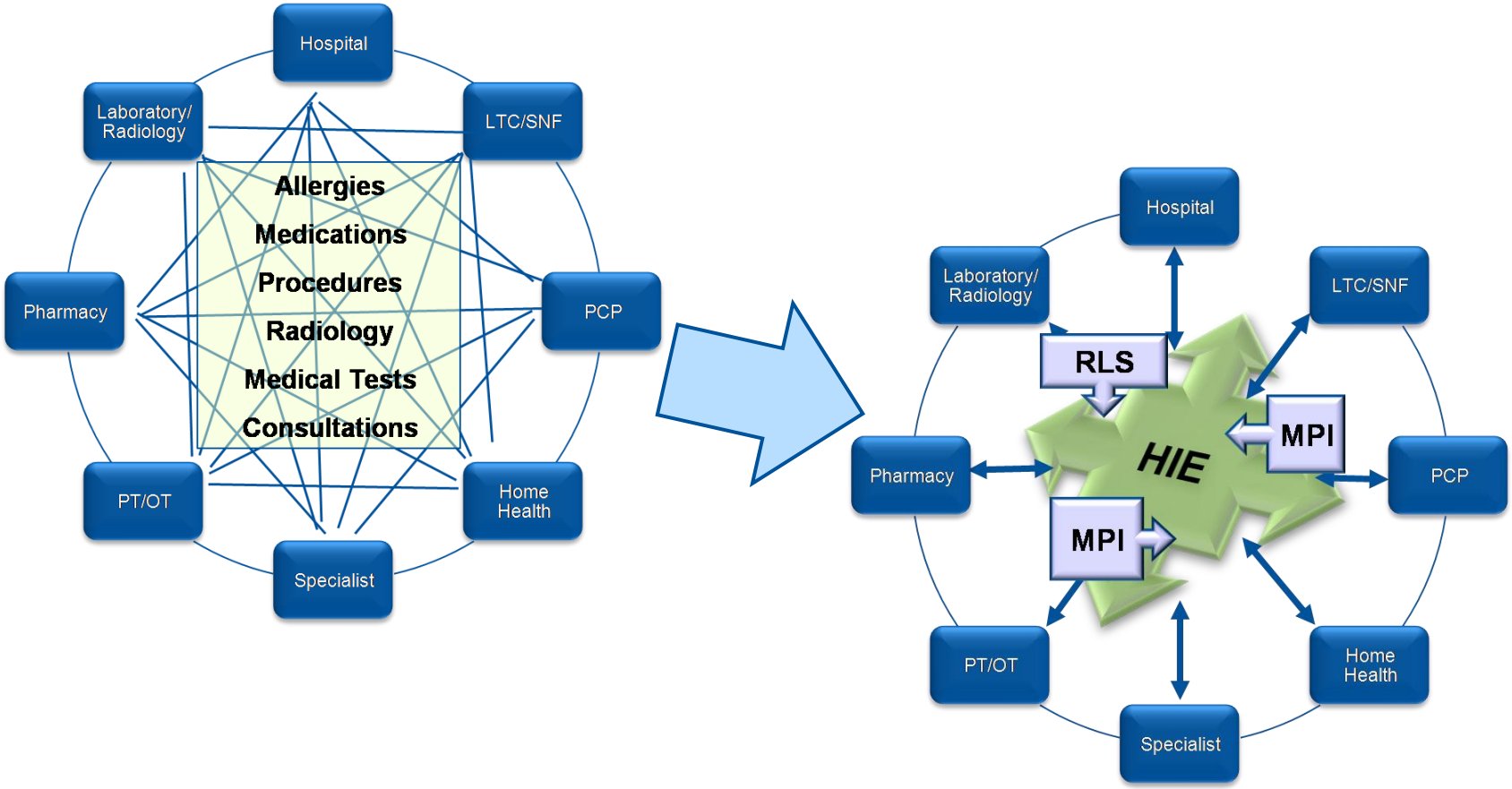
The funding strategy should adhere to a few fundamental principles

- The funding model should be simple, transparent and predictable
- To be sustainable, the funding model should not rely on short-term, unsustainable funding streams (i.e., expiring federal funds, grants, etc.)
  - One-time sources should be leveraged for growth and projects when available
- In the long-term, funding responsibilities of SHARE should be in approximate estimated or demonstrated proportion of the value that constituents receive
  - Funding should not be sought disproportionately from any one stakeholder or group of stakeholders
- The funding model should not dis-incent those needed for critical mass, especially in the near-term
- The funding model should abide by the enabling legislation for funding
- The funding model should harmonize with other, similar initiatives in the State, consistent with the coordination of services offered
  - Such initiatives should include the Medicaid Management Information Systems (MMIS), Health Benefits Exchange (HBEx) and All Payers Claim Database (APCD)
- The funding model should be reviewed bi-annually, or as appropriate, to ensure that all principles are adhered to

A few key assumptions are needed for SHARE's funding model

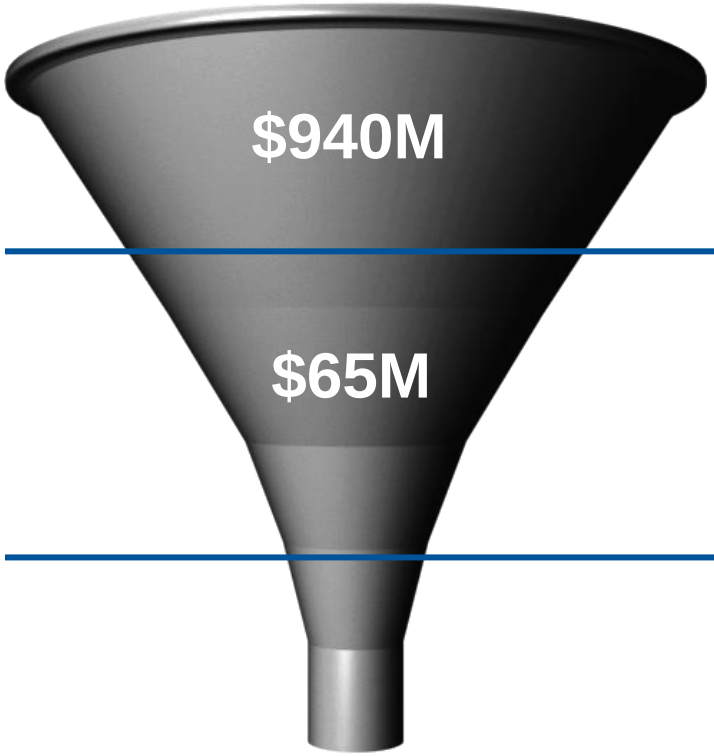
- Value and corresponding cost sharing must be viewed as a "point-in-time" analysis
- While the framework for the funding strategy is a solid foundation for the long term, the specifics of who receives value through SHARE and who should share in the costs should be re-evaluated over time
- Changes in the projected costs of SHARE should be taken into account as soon as the Authority can provide revised cost estimates based on vendor input (i.e., RFTP)
- With the exception of the updates to the costs model and corresponding changes to the funding formulae, we believe the specifics of the funding model as described herein are valid for the next two to three years
- The funding model and underlying analysis is based on current health care payment structures and does not reflect potential future changes such as health care payment reform
- All timeframes used in this model are based on the Federal Fiscal Year for alignment with the ONC Cooperative Agreement calendar, and the timing of the initial release of this report
- Medicaid contributions are based on an understanding resulting from discussions between Medicaid and OHIT. This model should be updated as further understandings are reached.

The old model of data exchange included a lot of point-to-point connections; the new model relies on SHARE to facilitate information flow



* MPI refers to Master Patient and Master Provider Indices

Studies suggest that there are $94 billion* in annual steady-state benefits from optimal use of HIE nationally



At approximately 1% of the US population, Arkansas residents would receive approximately 1% of the estimated national benefits

This sustainability study identified approximately $65M in financial benefits that could be realized by adoption and use of an HIE in Arkansas

OHIT identified $49M for a conservative estimate for measurable financial benefits that could be achieved through the adoption and use of SHARE in Arkansas

$94B assumes full implementation at Level 4 HIEI (see Appendix for framework) sophistication, at an estimated cost of $16.5B. The CITL study evaluated benefits between outpatient providers and laboratories, outpatient providers and radiology centers, outpatient providers and pharmacies, providers and public health departments, and providers and payers (Source: Pan E, et al. *The Value of Healthcare Information Exchange and Interoperability.* Chicago: HIMSS; 2005.)

There is significant value that can be achieved through the utilization of the HIE by accessing and utilizing the HIE

Benefits were determined by defining cases where SHARE could provide quantifiable, measurable, financial value. These benefits were transposed to constituent groups be calculating the values for each group and summing.

	Annual Benefits
Value that is Financial and Measurable	**$49,584,242**
Prevent Unnecessary 30-day Readmissions	$11,059,707
Reduce avoidable Adverse Drug Events (ADEs) - Inpatient	$2,935,910
Avoid Duplicative Testing and Imaging	$19,286,400
Avoid Duplicative Consults	$1,655,571
Reduce Length and Complexity of Stays	$3,469,712
Reduced administration burden for collecting, managing and distributing medical records (providers)	$4,448,349
Reduced administration burden for collecting, managing and distributing medical records (hospitals)	$6,728,594

		Annual Benefits	
		$49.6M	**100%**
Payers	Carrier / ASO	$13.5M	27%
	Medicaid	$10.1M	20%
	Medicare / Other Public	$7.9M	16%
Providers	Hospitals	$6.7M	14%
	Professionals	$4.4M	9%
Others	Uninsured	$7.0M	14%

Moving from a value per constituent group to “per metric” values (steady state calculations)

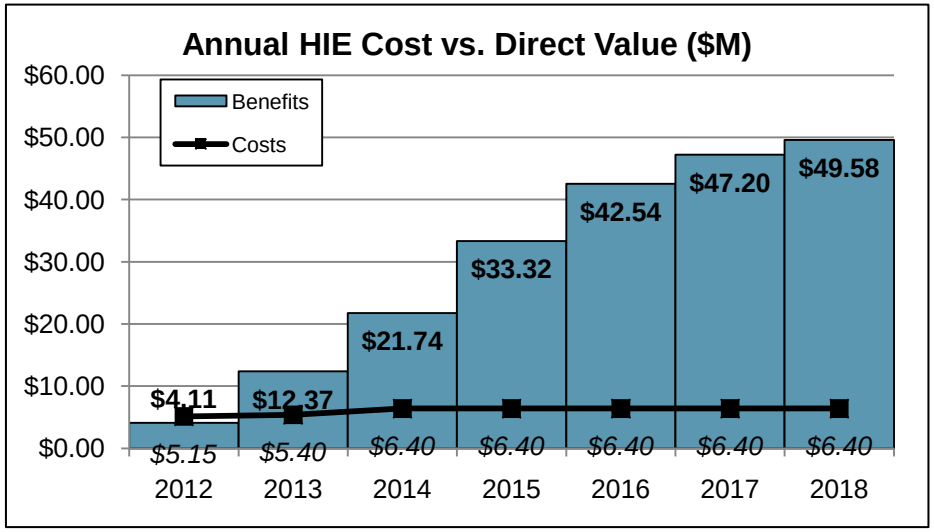
Using value allocations and metric data that we currently know, such as the number of covered lives, the number of staffed hospitals beds and the number of licensed health care professionals, we can calculate the projected annual value that SHARE will bring to each constituent as described below. These calculations are based on steady state benefits.

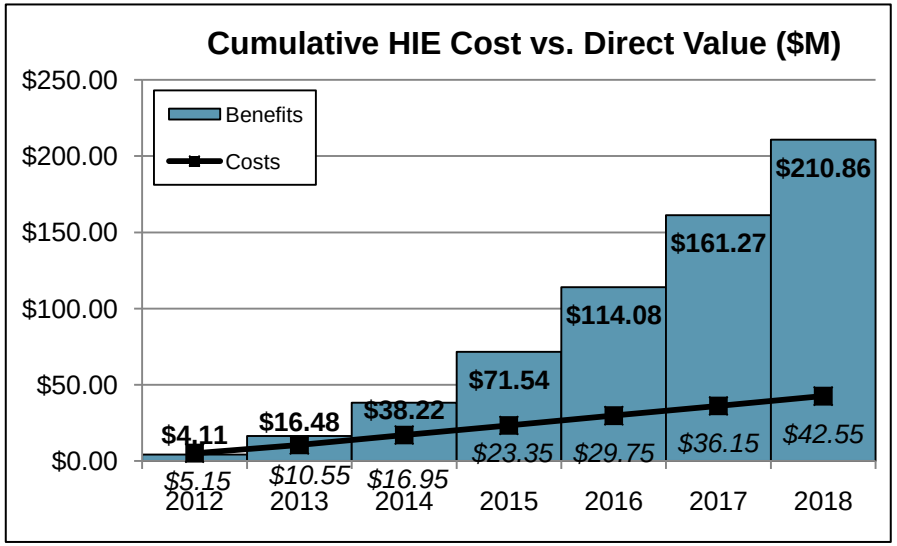
Constituent Group	Group Value Allocation	Calculation Metric	Per Metric Value Calculation	Per Metric Value (Direct Value)
Payers (Carrier / ASO)	$13.4M	1.0 M covered lives	$13.4M / 1.0M	$13.29 per lives covered per year
Medicaid	$10.0M	755,607 covered lives	$10.0M / 755,607	$13.29 per lives covered per year
Hospitals	$6.7M	9,345 staffed beds	$6.7M / 9,345	$720 per staffed bed per year
Health care Professionals	$4.4M	7,318 health care professionals	$4.4M / 7,318	$607 per professional per year

The annual direct, quantifiable financial benefits are expected to exceed annual costs in a short timeframe

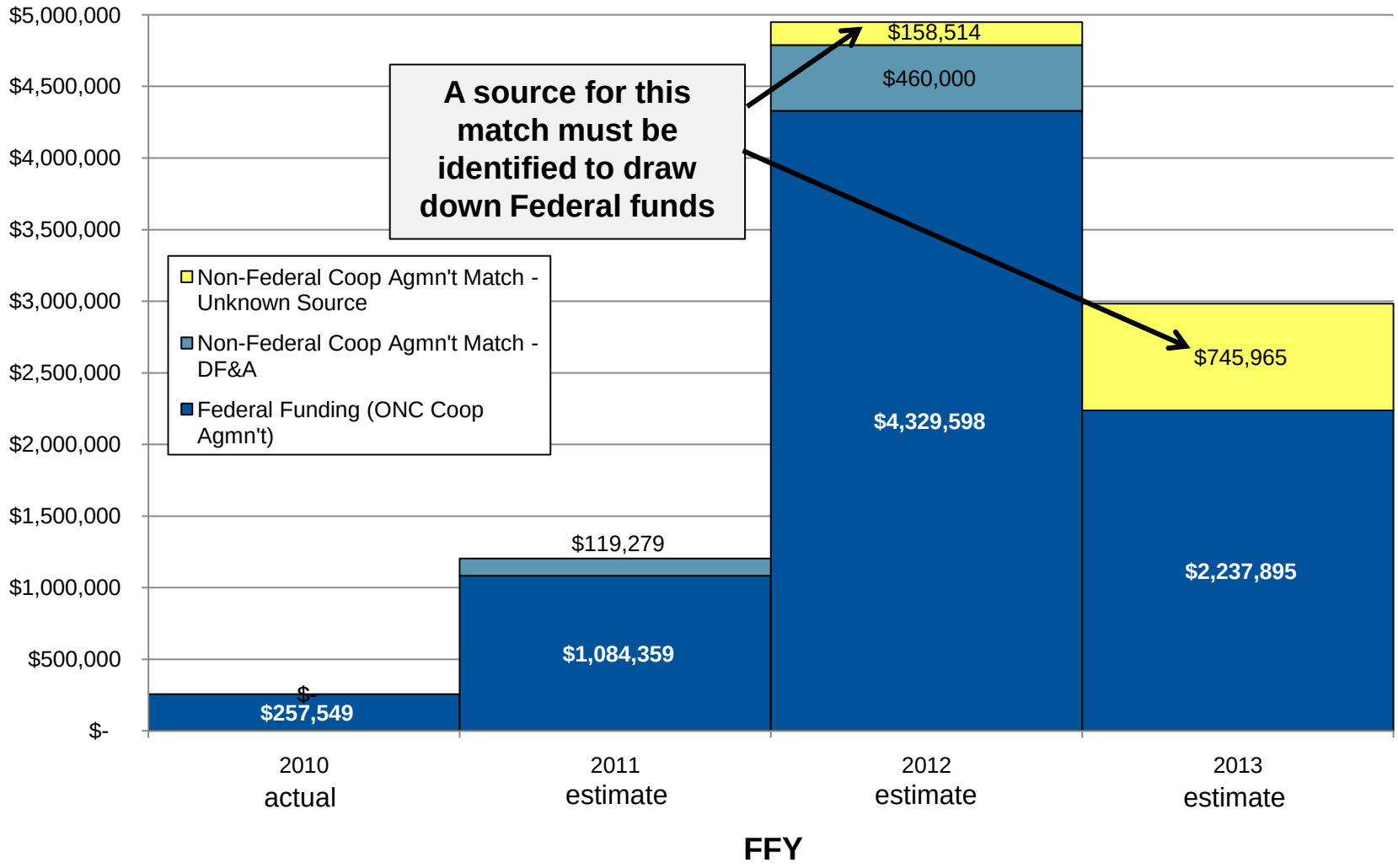
Annual Benefit for Direct Value ($ millions)

	2012	2013	2014	2015	2016	2017	2018
Annual Benefits	$4.11	$12.37	$21.74	$33.32	$42.54	$47.20	$49.58
Annual Costs	$5.15	$5.40	$6.40	$6.40	$6.40	$6.40	$6.40

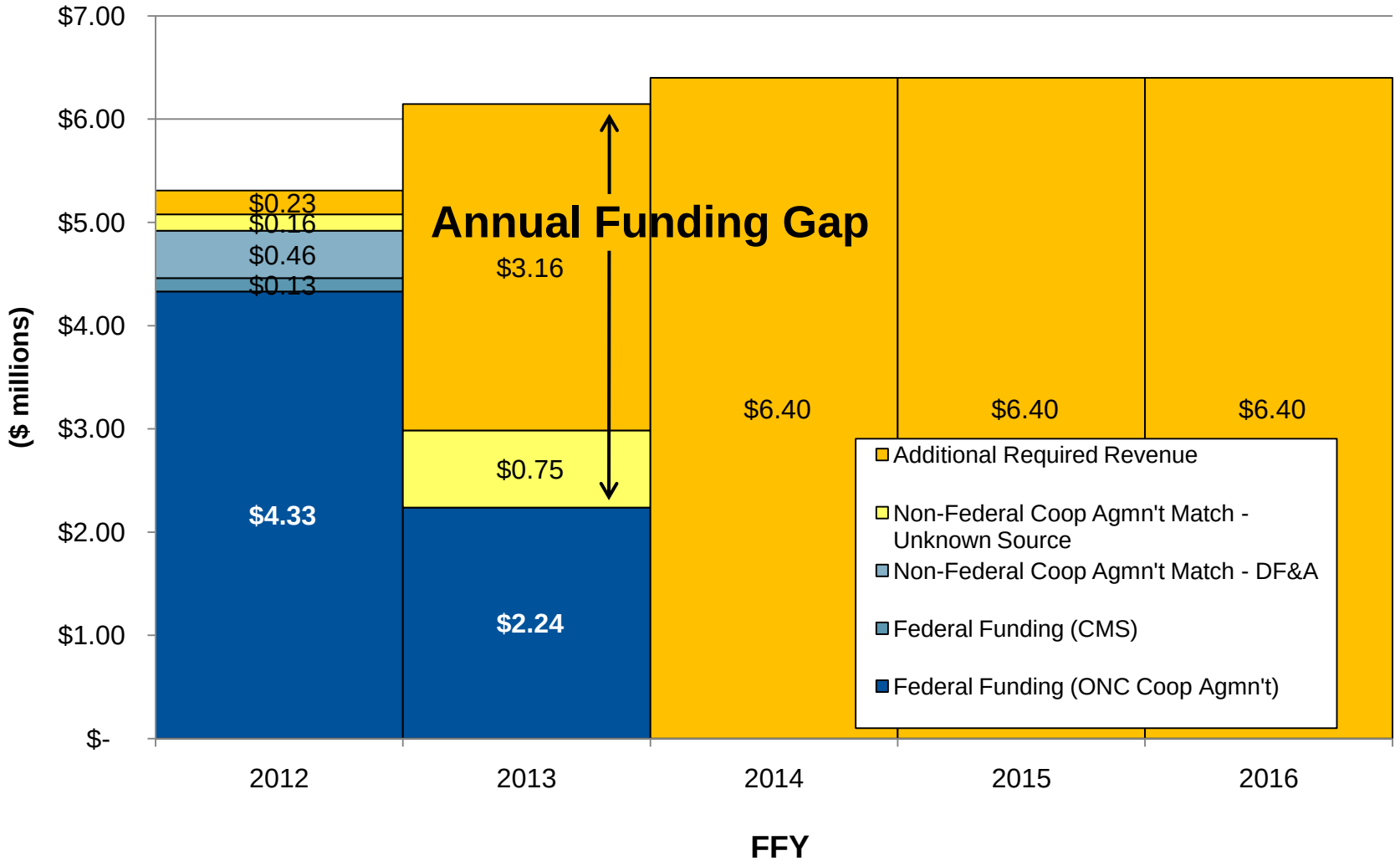




The ONC Cooperative Agreement provides critical development funds through the initial years of SHARE, though non-Federal matches must be supplied

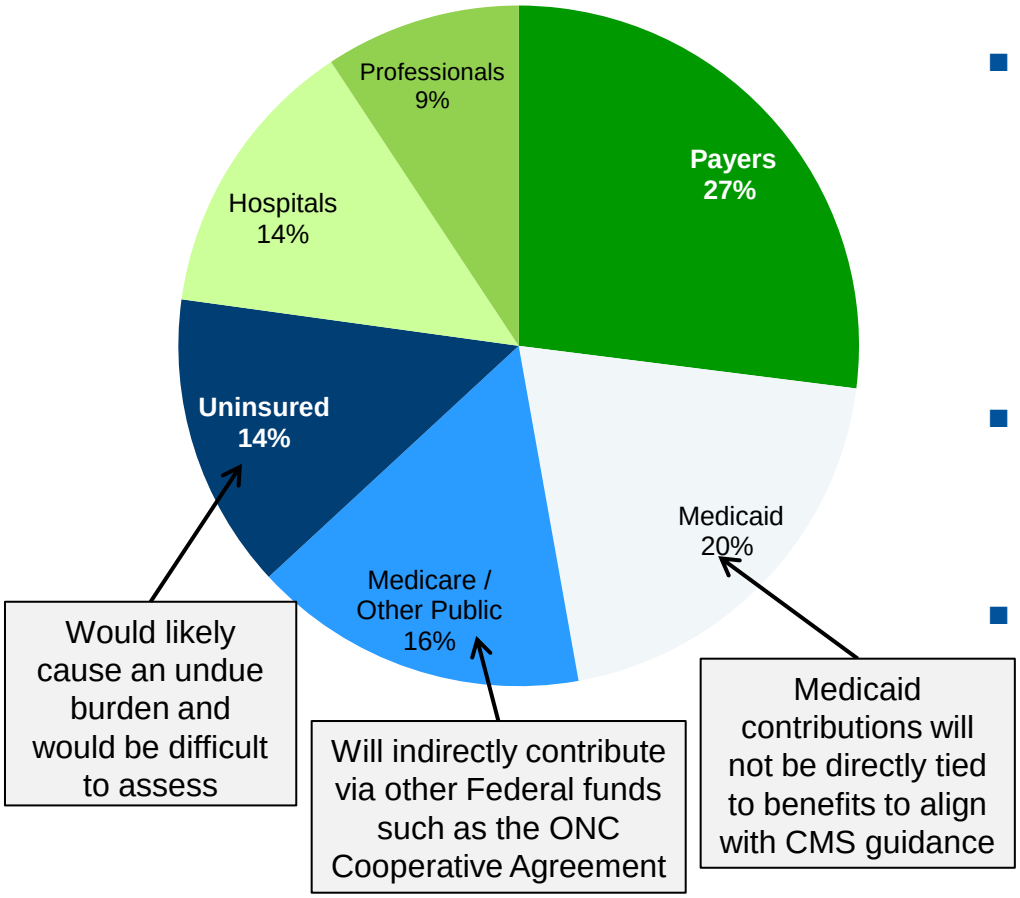


The difference between the estimated costs and the Cooperative Agreement funds leaves a funding gap that must be filled through other funding sources



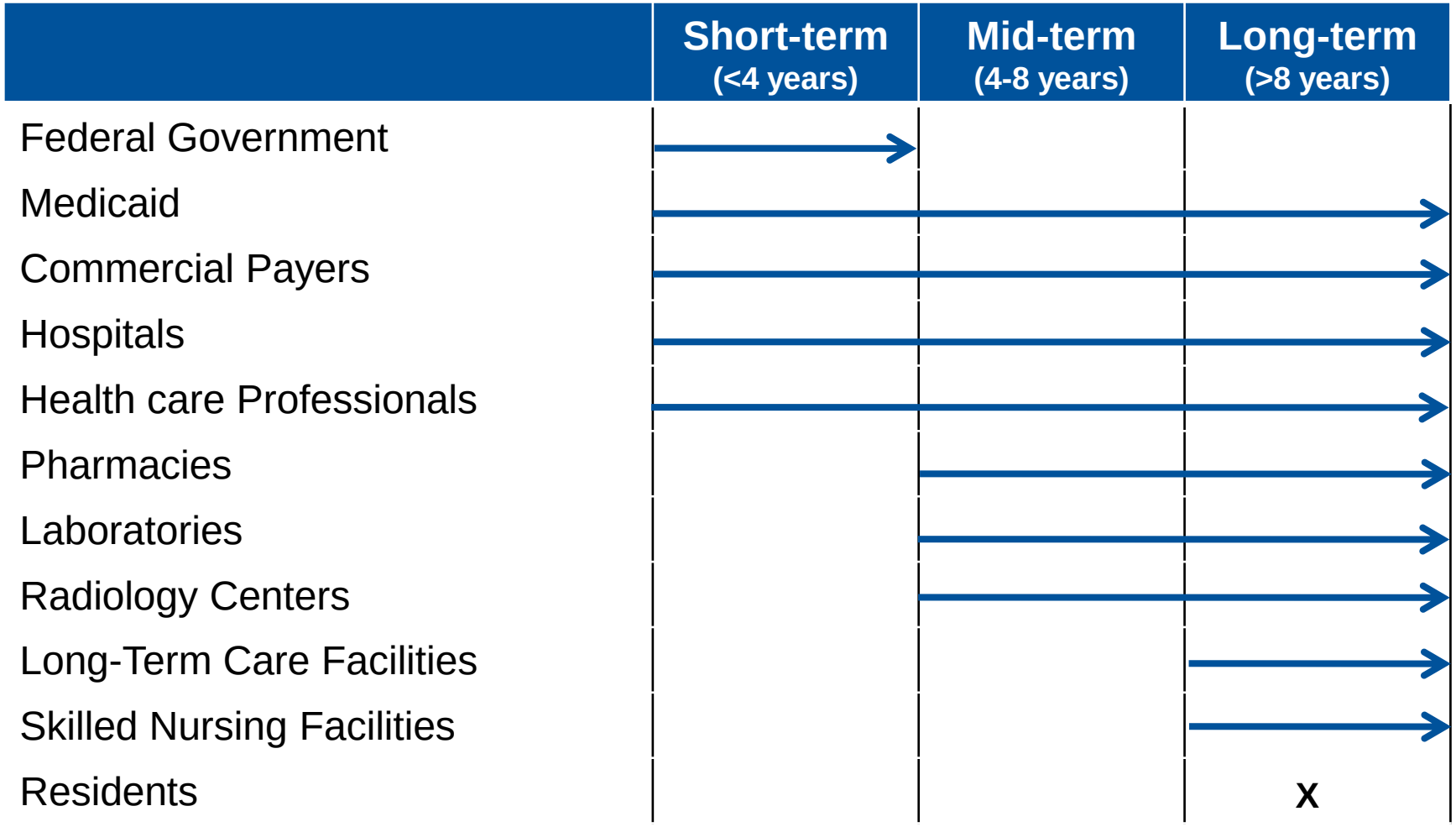
The value allocation is translated to SHARE's funding model based on an equitable sharing of costs (using direct quantifiable value at steady state)

Annual Value by Constituent group



- Per CMS guidance, Medicaid should at least contribute based on the percentage of the population they serve, which is currently 26%
- The three constituent groups that should share the remaining funding gap (those costs not covered by Federal or State funds, including Medicaid) in the near-term will be:
  - Payers (Carrier and ASO)
  - Health care professionals
  - Hospitals
- The funding gap should be closed by these three groups at ratios approximately consistent with the value they receive, which is currently estimated to be **27:9:14**, respectively
- The following groups will not be expected to contribute in the near-term:
  - Uninsured: Would likely cause an undue burden and would be difficult to assess
  - Medicare: Will indirectly contribute via other Federal funds such as the ONC Cooperative Agreement

Contributions by group should be introduced when financial benefits are able to be identified and measured



Regardless of this timeline, all potential users of SHARE should be able to use SHARE's services as soon are SHARE is able to support them

Near-term HIE funding strategy through State and Federal government funding

	Federal Government (ONC/CMS)	State of Arkansas
Amount	The remainder of the Cooperative Agreement Grant ($7.81M over 4 years) $130,000 planning funds from Medicaid through ARRA	Approximately $600,000 over 4 years for match of Cooperative Agreement (DF&A)
Schedule	On a Federal drawdown schedule, likely quarterly The $130,000 is being drawn down concurrent with match rates	In coordination with drawdown schedule, and will completed in FFY 2012
Pros/ Cons/ Risks	• Ends after Feb, 2014; it is not renewable • Cannot be re-appropriated • Requires non-Federal matching	• ONC Cooperative Agreement is now approved by ONC • Matching is secured through DF&A up to ~$600,000

CMS' State Medicaid Director Letter provides opportunities for applying for administrative funds for SHARE

- CMS' State Medicaid Director Letter published on May 18th 2011 provides guidance to State Medicaid agencies regarding the use of administrative funds to support health information exchange as part of the Medicaid program, but only if the State can demonstrate they have a business model that includes funding from various other health care stakeholders
- Opportunities for start-up funds include:
  - MMIS Administrative Funds for services that SHARE provides that directly relate to MITA business services and are necessary to enable them, and/or there are interfaces to the MMIS from external HIE entities
  - HITECH Administrative Funds in support of the Medicaid EHR Incentive Program
    - **$130,000 has already been received as part of the HITECH funds for the Incentive Program**
- Opportunities for ongoing funds include:
  - Adjustments to provider reimbursement methodologies, which are matched at a State's Federal medical assistance percentage (FMAP)
  - General program administration funds from Medicaid/CMS if SHARE is related to administering Medicaid
    - **This amount is related to the population covered by Medicaid, which is currently 26%.**
  - Reimbursement through payment for episodes of care as part of the health care payment reform
- OHIT should continue discussions with Medicaid on further opportunities to secure Federal funding, and other value add services

SHARE selected mechanisms for revenue collection that are simple, transparent, predictable and viable to implement

Constituent Type	Short-Term Mechanisms (<4yrs)	Mid-term / Long-Term Mechanisms (4-8 yrs – onward)
Payers – Medicaid	• **HITECH funds - Percentage of annual HIE budget equal to the percentage of professional that will apply for Medicaid Incentives (est. ~12%)** • **Medicaid funds for MMIS – Percentage of Medicaid-eligible total covered population; or percentage of total healthcare expenditures that are Medicaid expenditures (est. 26%; 19%, respectively)**	• **Adjustments to provider reimbursement methodologies, which are matched at a State's Federal medical assistance percentage (FMAP)** • **50% match rate for general program administration if SHARE is related to administering Medicaid** • **Addition of HIT specific allocation to episodic payments for care**
Payers – Risk-based Carrier Plans and Administrative Services Organizations	• Percentage of annual HIE budget based on population served • **Per member monthly/yearly fee** • Flat fees not based on size or volume	• Percentage of annual HIE budget based on population served • **Per member monthly/yearly fee** • Flat mandatory fees • Voluntary subscription fees
Hospitals and Nursing Facilities	• Flat fees not based on size or volume • Per facility fees • **Per staffed bed fee** • Per census count	• **Per staffed bed fee** • Per facility fees • Flat fees • Subscription fees • Per census count
Health Care Professionals	• Increase in statutorily-set licensing fees • **Fee by census or some other volume metric**	• Increase in statutorily-set licensing fees • **Subscription fee** • Per group/company fees

* Mechanisms **bolded** are those chosen as most viable for SHARE

SHARE selected mechanisms for revenue collection that are simple, transparent, predictable and viable to implement (cont'd)

Constituent Type	Short-Term Mechanisms (<4yrs)	Mid-term / Long-Term Mechanisms (4-8 yrs – onward)
Ancillary Services (Lab/Rad)	Not applicable in the early years of operations	• Per-licensed professional fees • Per location per licensed professional for each category of labs • **Per facility fees** • Licensing fees • Volume-based fee
Pharmacies	Not applicable in the early years of operations	• Per licensed professional fees • Licensing fees • **Per facility fees** • Licensing fees • Volume-based fee
Arkansas Residents, Patients an Caregivers	Possible mechanisms were considered but found not feasible in today's environment. These included: • Health care tax • Increase in non-health care tax (income, etc.) • Non-health care related assessment • User fee	

* Mechanisms **bolded** are those chosen as most viable for SHARE

A sustainable revenue model should be implemented for SHARE based on contributions by all constituent groups

- To meet revenue projections, the following model should be used
  - All per Metric assessments are based on the highest calculated minimum revenue per metric over the near-term planning period (currently three years)
  - A contingency allocation (assumed 25%) should be added during initial years to account for unforeseen expenses, differences between estimations and actual costs, and differences in adoption; this should be removed as funding needs become further understood
  - Model assumes optimal adoption by all constituent groups
  - An example of this is as shown:

Group	Allocation Metric	Per Metric Assessment	Total Annual Revenue Generated
ONC	Grant Contribution	N/A - Expired	$0
Medicaid	Grant Contribution	26% of SHARE Annual Expected Costs	$1,664,000
Payers	1.0 M lives covered by private insurance	$3.20 per life covered per year	$3,234,323
Hospitals	9,345 staffed beds	$172 per staffed bed per year	$1,607,386
Health care Professionals	7,318 health care professionals	$150 per professional per year	$1,097,700
Total			$7,603,410

Medicaid - cost & value comparison

Medicaid

OHIT has received $130,000 from CMS HITECH planning funds for the EHR Incentive Program.

Medicaid contribution to SHARE should be in proportion to the population served in the State, currently 26% but expected to rise to 35% in 2014.

Mechanism and Amount / Formula

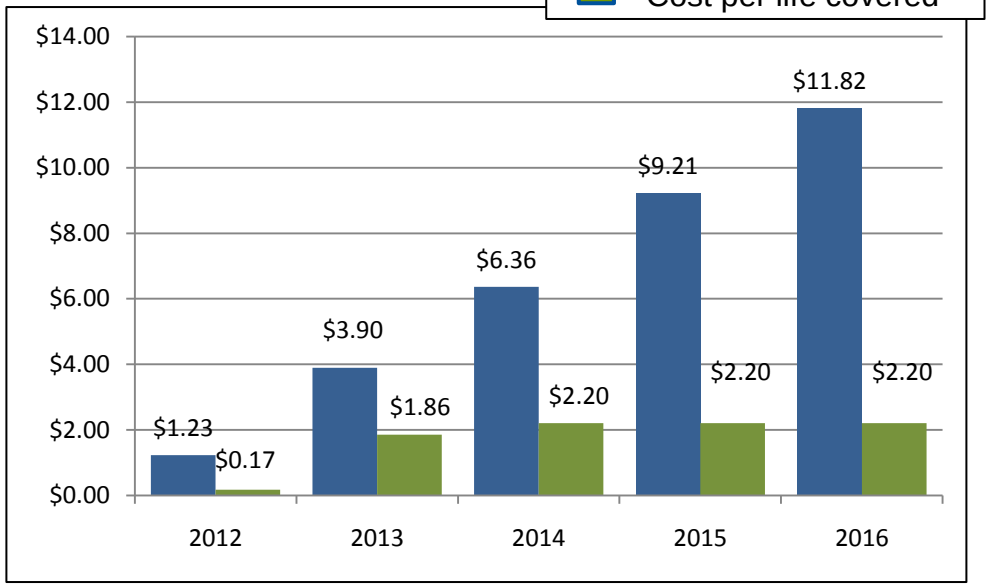
OHIT and Medicaid should work together to identify other Federal funding opportunities through the EHR Incentive Program, MMIS changes, and changes to episodic care payments

How it Will Work

The funding would likely be acquired on a Federal draw down schedule, which is approximately quarterly

Actions Required

Confirm current contributions, identify additional opportunities with Medicaid, and pursue approval from CMS.



Recommendation

Use Medicaid funding at 26% of the operating budget while continuing discussions with Medicaid for other opportunities to provide services, and other Federal funding opportunities.

Payers - cost & value comparison

Payers (Carrier/ASO)

All commercial plans would be expected to contribute

Mechanism and Amount / Formula

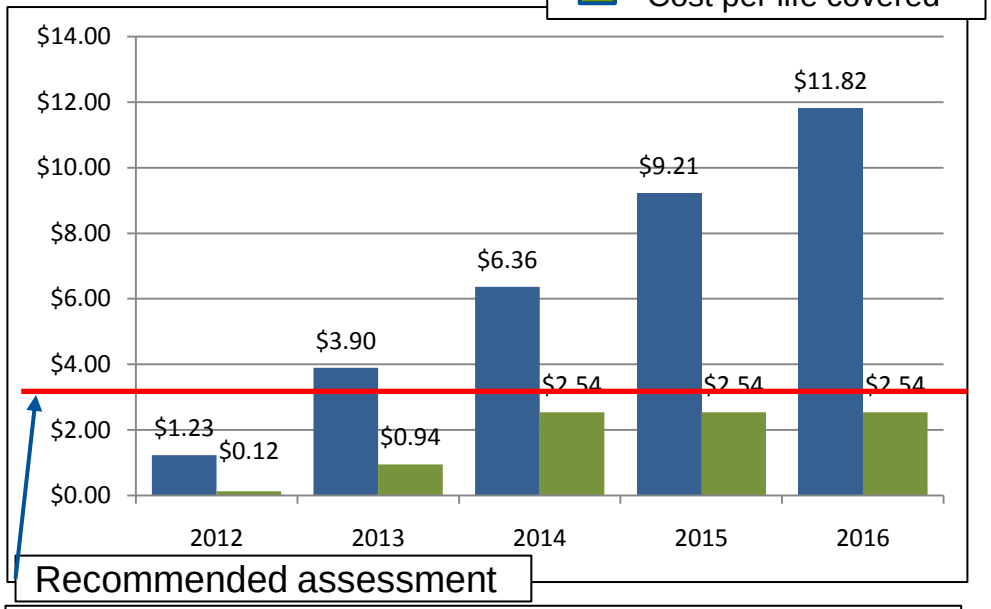
Payers should contribute approximately 54% of the funding gap* annually. The charge per customer should be based on a consistent and known metric, the most common of which is the number of members. This also appropriately spreads costs across by size of organization.

How it Will Work

The allocation should be calculated by a central, reliable source, such as the Department of Insurance, at a consistent point in time, such as Oct 1, and paid on a regular basis, such as quarterly, to ensure predictability and reduce burdensome lump payments.

Actions Required

Instituting fees may require additional approval or legislation. OHIT should work with the Department of Insurance, the Governor's Office and other legislative bodies to make appropriate changes to enable this mechanism



Recommendation

Assess $3.20 per member per year (highest expected minimum assessment over first 3 years + 25% contingency)

Calculated at beginning of Federal Fiscal Year

Paid quarterly or annually

* The term "funding gap" is used to denote the total cost of SHARE, reduced by the ONC cooperative agreement and CMS funding

Hospitals - cost & value comparison

Hospitals

All acute care hospitals would be expected to contribute. Hospitals should be defined as those that meet the definition for the EHR Incentive Programs

Mechanism and Amount / Formula

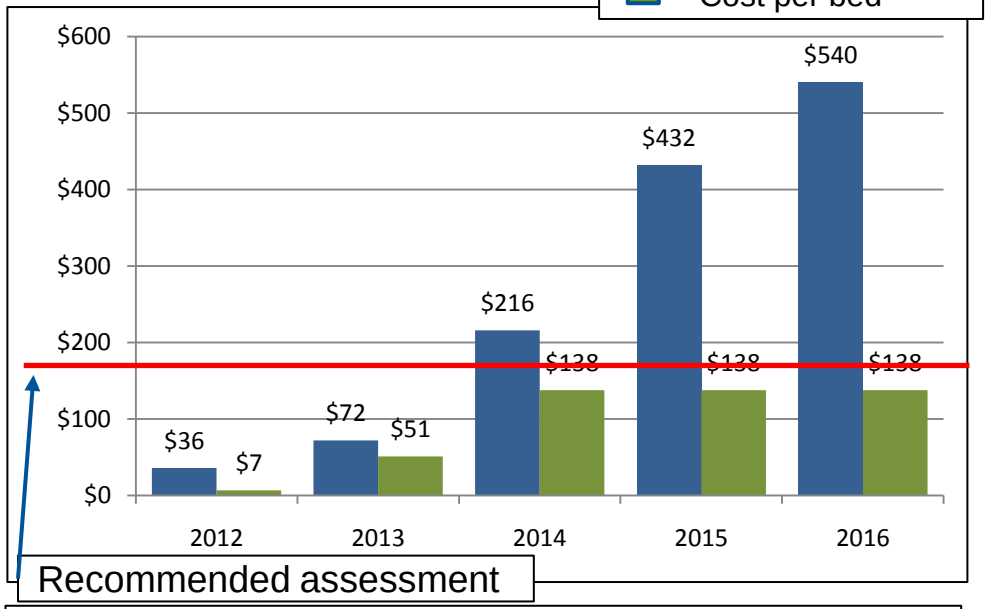
About 27% of the funding gap* should be covered by hospitals. This should be allocated based on a consistent metric, such as the number of staffed beds, or an annual census count, calculated by a central, reliable source, such as the Hospital Association.

How it Will Work

The allocation should be calculated at a consistent point in time, such as Oct 1, and paid on a regular basis, such as quarterly, to ensure predictability and burdensome lump payments.

Actions Required

Instituting fees may require additional approval (i.e., State Legislature)



Recommendation

Assess $172 per bed per year (highest expected minimum assessment over first 3 years + 25% contingency)

Calculated at beginning of Federal Fiscal Year

Paid quarterly or annually

* The term “funding gap” is used to denote the total cost of SHARE, reduced by the ONC cooperative agreement and CMS funding

Professionals - cost & value comparison

Health care Professionals

All physicians and dentists should be expected to contribute.

Mechanism and Amount / Formula

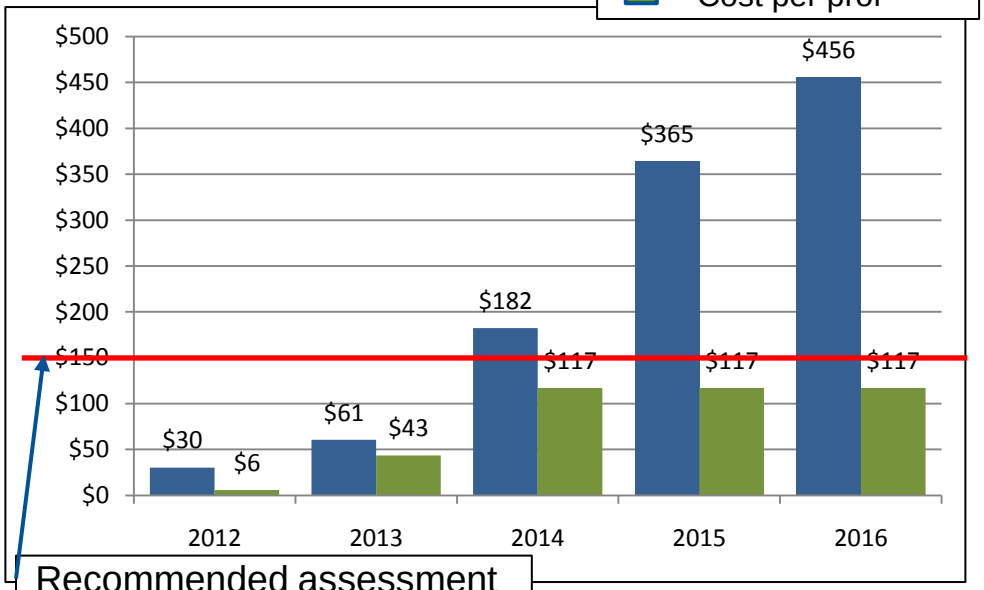
About 19% of the funding gap* should be covered by professionals. This should be allocated per professional.

How it Will Work

The charge should be recovered as part of the professional's licensing fees, if possible, to avoid additional billing requirements

Actions Required

Mandating additional costs in professional licensing fees will require additional approval



Recommendation

Assess $150 per professional annually (highest expected minimum assessment over first 3 years + 25% contingency)

*The term "funding gap" is used to denote the total cost of SHARE, reduced by the ONC cooperative agreement and CMS funding.

Adoption rates for constituent groups should be calculated so as not to overestimate revenues in the first years of the model

- A simple model was used to project adoption rates in the first four years for all constituent groups.
- These rates are assumed to be averaged over the year

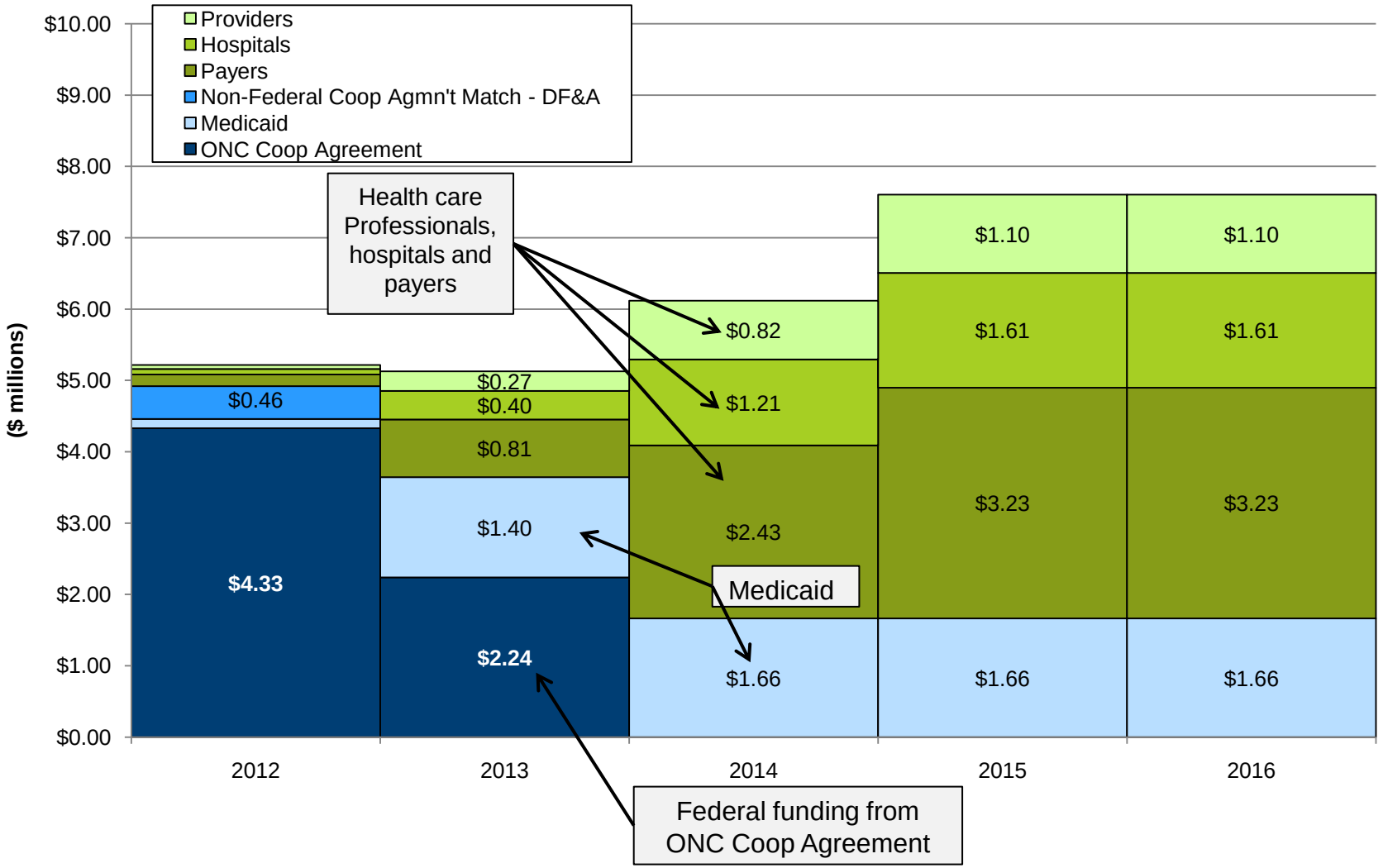
Year (FFY)	Adoption Rate
2012	5%
2013	25%
2014	75%
2015	Optimal

Pro Forma Financial Projections

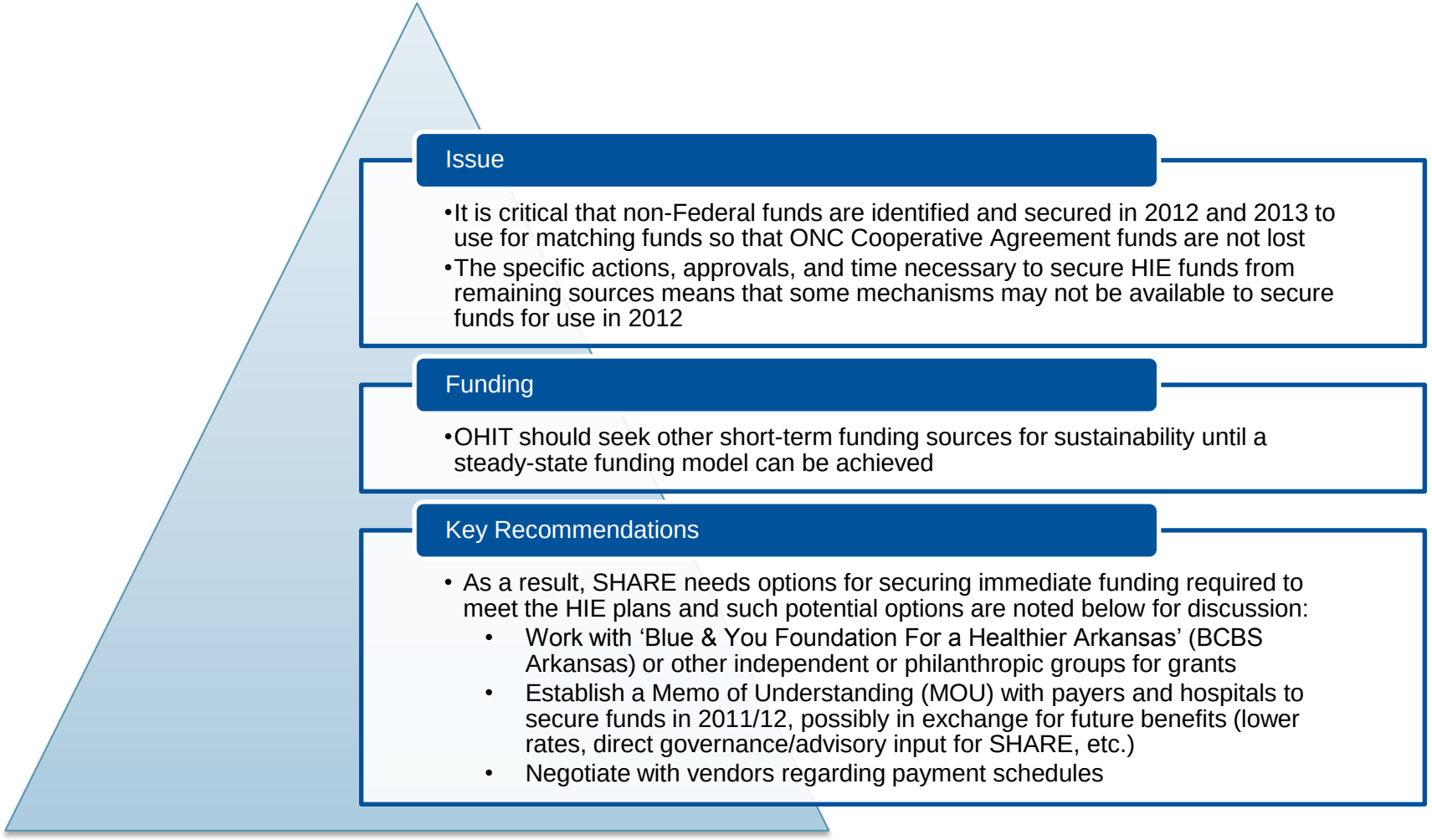
(FFY; $ millions)	2012	2013	2014	2015	2016
Revenue Projections					
Grants / Contributions					
ONC Coop Agreement	$4.33	$2.24	$0.00	$0.00	$0.00
Medicaid (including HITECH planning)	$0.13	$1.40	$1.66	$1.66	$1.66
Non-Federal Coop Agmn't Match - DF&A	$0.46	$0.00	$0.00	$0.00	$0.00
Assessments / Subscriptions					
Payers	$0.16	$0.81	$2.43	$3.23	$3.23
Hospitals	$0.08	$0.40	$1.21	$1.61	$1.61
Health care Professionals	$0.05	$0.27	$0.82	$1.10	$1.10
Total Revenue	**$5.22**	**$5.13**	**$6.12**	**$7.60**	**$7.60**
SHARE Costs					
One-Time					
Infrastructure / Software Investment	$2.25	$1.00	$1.00	$1.00	$1.00
Ongoing					
Infrastructure / Software Licenses and Maintenance	$1.50	$3.00	$4.00	$4.00	$4.00
Organization Costs	$1.40	$1.40	$1.40	$1.40	$1.40
Total Costs	**$5.15**	**$5.40**	**$6.40**	**$6.40**	**$6.40**
Surplus (Deficit)	**$0.07**	**($0.27)**	**($0.28)**	**$1.20**	**$1.20**

Pro forma financial statements should be updated as information becomes available to limit surplus and deficit in future years

Overview of the resulting projected funding structure by constituent



An immediate funding strategy must be established to start a cash flow in FFY 2012



Additional steps should be taken to complete this model

- OHIT should talk with council members and representatives from constituent groups one-on-one or small group discussions for feedback and necessary adjustments
- OHIT should reach out to broader stakeholder groups such as the Hospital Association, Medical Society, etc. for additional feedback, and to help to market SHARE's services to larger populations of potential users
- Any feedback should be shared with the HIE Council for inclusion in the Model
- Adopt and implement the Model for SHARE

This Model should be updated regularly, especially in the initial years of SHARE

- This model should be revised as additional information is received or agreed upon. These updates should include at a minimum:
  - Further definition of solution costs after negotiation with vendors
  - Medicaid support agreed upon and approved by CMS
- OHIT should create and routinely update a tracking tool that measures and documents the value, costs and revenue of SHARE to assist in informing future plans
  - This information should be reviewed for accuracy and progress reporting quarterly or semi-annually
- The funding model should be adjusted given updated cost and value information on an approximately annually basis for the first years of SHARE, and regularly once SHARE is well established
- Medicaid enrollment is planned to increase in 2014 by approximately 250,000. The sustainability funding model should be updated with this additional population with appropriate time before this change will take place

Appendix

CITL's Healthcare Information Exchange and Interoperability (HIEI) Taxonomy

- HIEI is a conceptual framework describing how healthcare entities share information. CITL (Center for Information Technology Leadership) created a functional taxonomy (with four levels) based on three factors in data exchange:
  - The amount of human involvement,
  - the sophistication of IT, and
  - the adoption of standards.

Level	Description	Examples
1	Non-electronic data	Mail, phone
2	Machine-transportable data	PC-based and Manual Fax/Email of pictures, Portable Document Format (PDF)
3	Machine-organizable data	Secured e-mail or free text or incompatible/proprietary file formats
4	Machine-interpretable data	Structured messages standardized content/data such as automated entry of LOINC results from an external lab into a primary care provider's electronic health record (EHR)

Source: Pan E, et al. *The Value of Healthcare Information Exchange and Interoperability.* Chicago: HIMSS; 2005.)

SHARE will provide value in multiple ways – Indirect / Qualitative Examples

Improved Quality and Consistency of Care

- Provide complete, accurate information securely to all appropriate health professionals at the right time
- Ensure all information is passed immediately with the patient at every transition of care
- Achieve effective coordination across all care providers
- Increase provider and patient confidence that all information transferred is accurate and complete
- Strengthen current and future Arkansas health care initiatives to improve clinical outcomes and patient safety
- Improve access to quality health care services for under-served populations by strengthening the provision of health care through SHARE

Enhanced Resident/Patient Care Delivery Experience

- Enhance residents and patient's active participation in their health care
- Reduced time away from work or home to receive additional unnecessary tests or images
- Reduced Waiting time between appointments while medical information is transmitted between providers
- Reduced time waiting if information is lost, or incomplete information is retrieved
- Reduction of preventable readmissions to hospitals due to ineffective transitions of care
- Reduction in time spent on the above for caretakers of patients

SHARE will provide value in multiple ways – Indirect / Qualitative Examples, (cont'd)

Supporting Infrastructure for - Public Health Reporting

- Reporting to public health registries, or registries of any sort, are highly beneficial to populations in identifying state-wide trends, anomalies and "hot spots", such as the information gathered in the landmark article "Hot Spotters" by Atul Gawande
- Reporting of data has been identified as a key part of Meaningful Use of EHRs; the following are objectives from the Menu Set of Meaningful Use Stage 1, and are expected to be in the Core Set for Stage 2:
  - Capability to submit electronic data to immunization registries or Immunization Information Systems and actual submission in accordance with applicable law and practice [at least one test]
  - Hospitals Only: Capability to submit electronic data on reportable (as required by state or local law) lab results to public health agencies and actual submission in accordance with applicable law and practice [at least one test]
  - Capability to submit electronic syndromic surveillance data to public health agencies and actual submission in accordance with applicable law and practice [at least one test]

SHARE will provide value in multiple ways – Benefits from Value-Added Services

SHARE's Additional Capabilities

- Facilitate HIE Meaningful use requirements for Arkansas providers through –
  - Secure messaging and process protocols to meet HIE stage 1 MU
  - Master provider index / database and Master patient index
  - Web Portal for those providers without EHR/EMR systems capable of facilitating secure messaging
- Facilitate e-prescribing and secure messaging, which will be utilized in the exchange of clinical summaries and structure lab results
- Provide options for single sign-on strategies for statewide services Arkansas based services to include but not limited to HIE, MMIS, Health Benefits Exchange and Eligibility

Supporting Infrastructure for Other Innovations (e.g., Integration with the All-Payer Claims Database (APCD)

- Nationally, all-payer claims databases are emerging to address the need for comprehensive information about health and to support health care health care transparency and reform initiatives in states
- Health information technology and health information exchanges (HIEs) have the potential to enhance existing databases with clinical information for quality and outcomes reporting
- Although there is a significant correlation between the goals of APCDs and HIEs, there is not much evidence of integration between the two in the US other than conceptual coordination. This is likely due to:
  - The lack of need of an HIE to collect information due to existing EDI
  - The siloed funding that likely created the APCDs
  - The late arrival of HIEs compared to APCDs in existing states

Benefits were assigned to constituent groups using insurance coverage

		Payers/Plans*				Providers	
	Value	Private Insurance	Medicaid	Medicare / Other Public	Uninsured	Hospitals	Professionals
Value that is Financial and Measurable	**$49,584,242**						
Prevent Unnecessary 30-day Readmissions	$11,059,707	35%	26%	21%	18%		
Reduce avoidable Adverse Drug Events (ADEs) - Inpatient	$2,935,910	35%	26%	21%	18%		
Reduce avoidable Adverse Drug Events (ADEs) - Ambulatory	$49,857	35%	26%	21%	18%		
Avoid Duplicative Testing and Imaging	$19,286,400	35%	26%	21%	18%		
Avoid Duplicative Consults	$1,655,571	35%	26%	21%	18%		
Reduce Length and Complexity of Stays	$3,469,712	35%	26%	21%	18%		
Reduced administration burden for professionals	$4,448,349						100%
Reduced administration burden for hospitals	$6,728,594					100%	

…and used to determine overall direct value

		Payers/ Plans				Providers	
	Value ($M)	Private Insurance	Medicaid	Medicare / Other Public	Uninsured	Hospitals	Professionals
Value that is Financial and Measurable	**$49.6**						
Prevent Unnecessary 30-day Readmissions	$11.1	$3.9	$2.9	$2.3	$2.0		
Reduce avoidable Adverse Drug Events (ADEs) - Inpatient	$2.9	$1.0	$0.8	$0.6	$0.5		
Reduce avoidable Adverse Drug Events (ADEs) - Ambulatory	$0.0	$0.0	$0.0	$0.0	$0.0		
Avoid Duplicative Testing and Imaging	$19.3	$6.7	$5.0	$4.0	$3.5		
Avoid Duplicative Consults	$1.7	$0.6	$0.4	$0.3	$0.3		
Reduce Length and Complexity of Stays	$3.5	$1.2	$0.9	$0.7	$0.6		
Reduced administration burden for professionals	$4.4						$4.4
Reduced administration burden for hospitals	$6.7					$6.7	
Direct	**$49.4**	**$13.5**	**$10.1**	**$7.9**	**$7.0**	**$6.7**	**$4.4**
Direct	100%	27%	20%	16%	14%	14%	9%

Benefits will grow over time as value is realized by a growing user base

	Value	2012	2013	2014	2015	2016	2017	2018
Value that is Financial and Quantifiable	**$49.6**							
Prevent Unnecessary 30-day Readmissions	**$11.1**	5%	10%	25%	50%	70%	90%	100%
Reduce avoidable ADEs - Inpatient	**$2.9**	10%	30%	50%	70%	85%	100%	100%
Avoid Duplicative Testing and Imaging	**$19.3**	10%	40%	60%	80%	100%	100%	100%
Avoid Duplicative Consults	**$1.7**	5%	10%	30%	50%	70%	90%	100%
Reduce Length and Complexity of Stays	**$3.5**	20%	40%	60%	80%	100%	100%	100%
Reduced administration burden for professionals	**$4.4**	5%	10%	30%	60%	75%	90%	100%
Reduced administration burden for hospitals	**$6.7**	5%	10%	30%	60%	75%	90%	100%

Guiding Assumptions:

- Value realization was generally aligned with the expected release of supporting HIE services
- Benefits that require significant clinician workflow changes were slower to achieve realization
- Benefits that require patient/resident adoption were slower to achieve realization
- Larger organizations were able to realize benefits before smaller organizations

Contacts

Gartner Contact
Frank Petrus
Senior Managing Partner
Public Sector Health and Human Services
Practice Lead
Gartner Consulting
Telephone: +1 617-851-6800
frank.petrus@gartner.com

Gartner Contact
Erika Chahil
Senior Director
Gartner Consulting
Telephone: + 1 703-201 6974
erika.chahil@gartner.com